

Amendments to the Claims

The listing of claims will replace all prior versions, and listings of claims in the application.

1-20. (Cancelled)

21. (Currently Amended) A system for producing a pulse code modulation (PCM) signal, comprising:

a first filter configured to produce an input signal $I(n)$ from a secondary audio program (SAP) signal;

~~a frequency modulator (FM) including,~~

a second filter that generates a quadrature-phase signal $Q(n)$ from the input signal $I(n)$ [[,]];

~~a FM device demodulator configured to generate a frequency modulated signal $FM(n)$ from the input signal $I(n)$ and the quadrature phase signal $Q(n)$ FM demodulated signal substantially equal to $Z(n)/X(n)$, wherein $Z(n)$ and $X(n)$ are functions of $I(n)$ and $Q(n)$, the FM demodulator including a denominator device that estimates a value $1/X(n)$ based at least in part on a prior estimated value of $1/X(n)$;[[,]] and~~

~~a third filter configured to produce the pulse code modulation (PCM) PCM signal from the [[$FM(n)$]] signal substantially equal to $Z(n)/X(n)$.~~

22. (Currently Amended) The system of claim 21, wherein ~~the $FM(n)$ signal $Z(n)$ is substantially equal to $[I(n)Q'(n)-I'(n)Q(n)]$ and $X(n)$ is substantially equal to $[I^2(n)+Q^2(n)]$ equals $[I(n)Q'(n)-I'(n)Q(n)] / [I^2(n)+Q^2(n)]$.~~

23. (Original) The system of claim 21, wherein the SAP signal is a constant magnitude signal, a sine wave, or a cosine wave.

24. (Original) The system of claim 21, wherein the first filter is a band pass filter.

25. (Original) The system of claim 21, wherein the second filter is a Hilbert filter.

26-31. (Cancelled)

32. (New) The system of claim 21, wherein the denominator device estimates the value $1/X(n)$ based at least in part on the prior estimated value of $1/X(n)$ plus an error value.

33. (New) The system of claim 32, wherein the error value is substantially equal to $[1-X(n)/X(n-1)]$.

34. (New) The system of claim 33, wherein the error value is scaled before being added to the prior estimated value of $1/X(n)$.